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REPORT VOLGA-DON CANAL IN FINAL STAGES OF CONSTRUCTION

[Numbers in parentheses refer to appended sources.]

The month of October was a critical period in the construction of the Volga-Don Canal because its builders had promised Stalin to complete concreting all the main structures of the canal, including locks, pumping stations, and dams, before the really cold weather set in.(1) A report as late as mid-October states that on the whole the daily plans for October were not being fulfilled, even though Stakhanovite and socialist competition movements had been introduced. The quantity of concrete placed per day was still on the same level as in September, while the driving of piles and some other branches of work lagged. Failure to fulfill the October plan threatened to set back the whole schedule for putting the canal in operation in May 1952.(2) The schedule calls for the completion of lock No 3 in December 1951, for the readiness, in February 1952, of the pumping station located in the Donskoy Sector of the canal to pump water from the Don into the Karpovskiy Reservoir, and for the completion of all other structures of the canal during March and April 1952.

Time limitations have led to the further acceleration of work, which has been going on day and night. The constant introduction of new methods has increased the efficiency of labor and allowed the full exploitation of available machinery.(3) The need for greater power resulted in the completion, in October, of a second circuit of the high-tension transmission line along the entire length of the canal between Stalingrad and Kalach-on-Don.(4) The urge to expedite the work has prompted the decision to begin the assembly and installation of equipment at the locks, pumping stations, and other units of the canal as soon as the progress of the concreting permits, rather than waiting for the completion of the concreting as originally planned. At the end of October, a report indicated that the assembling work was well under way along the entire length of the canal.(4) Whereas only a limited number of fitters appeared at only a few points of the canal during the summer, large numbers followed closely behind concreting gangs in October.(3)

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Equipment has been arriving, with the Dnepropetrovsk Plant imeni Molotov completing and shipping nine complete sets of upper drop gates and eight sets of the lower double-wing gates for the locks of the canal, including a complete set of gates for lock No 11.(5)

The construction site is well supplied with building machinery; a number of factors illustrate the continuing mechanization of the work. The suction dredges used in the construction of DneproGES only had an output of 100 cubic meters per hour, whereas the output of the latest model dredge manufactured in the USSR, which has been introduced in the construction of the Volga-Don Canal, is 1,000-1,200 cubic meters per hour; it does the work of 25,000 workers. The USSR used to import dump trucks of 1.5 ton capacity, whereas the trucks now produced in the USSR have a capacity of 10-25 tons. Imported concrete mixers used at the DneproGES construction site had a capacity of 1,000 to 1,200 liters, while present Soviet makes have a capacity of 4,000-5,000 liters. Hundreds of workmen mixed concrete during the construction of the DneproGES, while on the Volga-Don Canal construction site one automatic concrete mixing plant, which delivers 1,000 cubic meters of concrete per hour, is operated by four or six men. At DneproGES the placement of 110,000 cubic meters of concrete per month was considered a world record, while at the construction sites of Kuybyshev and Stalingrad GES this figure was exceeded by three times.(6) The eight concrete-mixing plants at the Tsimlyanskaya GES construction site had, in September, a total capacity of 7,000 cubic meters in a 24-hour workday (7); a later report indicates, however, that 8,975 cubic meters of concrete were laid on 28 October 1951.(8)

The table below shows an increase in the number of dredges used on the construction projects since 1948. The majority of these dredges were concentrated on the construction of the Volga-Don Canal and Tsimlyanskaya GES, where about 35 percent of all the earthwork was to be carried out with dredges. In 1951, the productivity of the suction dredges operating on the canal construction was 1.5 times higher than in 1950. The placement of 4.5 million cubic meters of earth into the Tsimlyanskaya dam in August 1951 established a world record.(9)

Type of Suction Dredge	Capacity (cu m/hr)	No of Dredges (percent)			
		1948	1949	1950	1951
40-30	40	100	100	100	75
100-35	100	100	150	250	400
300-40	300	100	300	1,300	2,200
500-60	560	--	--	100	1,100
1000-80	1,200	--	--	--	First introduced in October 1951
	1,500	--	--	--	Being designed for Main Turkmen Canal construction.

Other machinery used in the Volga-Don Canal construction is shown in the following table.(9)

Year	Bulldozers	Tractors	No of machines (percent)			Excavators
			Automobiles	Pipe Layers		
1949	100	100	100	100		100
1950	400	300	700	800		200
1951	650	1,100	2,000	2,300		700

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A report of 13 November states that work on the canal is in its final stages, and that one of the important parts of the canal, the Bereslavskiy Hydraulic Unit, consisting of a dam, reservoir, spillway, and emergency gates, has been completed and made ready for use on 5 November, 24 days ahead of schedule.(10) Completion of all the main work on locks No 3, 10, and 13 was reported on 6 November.(29) The section of the canal between the Don River and lock No 13 has also been completed. Barges loaded with construction materials use this section.(12)

Thousands of homesteads and hundreds of kilometers of communication wires, highways, and railroads are being moved from the sites of the Varvarovskiy, Bereslavskiy, and Karpovskiy reservoirs, which together will occupy 2,000 square kilometers.(13) Reinforced-concrete highway bridges across the canal are under construction in the Marinovskiy and Vodorazdel'nyy construction sectors. Another bridge across the Karpovka River has been completed and several others are being built on the highway running along the canal.(14)

The construction site of the canal is divided into several construction sectors. Krasnoarmeyskiy Construction Sector is responsible for the construction of the eastern section of the canal, which begins in Sareptskiy Zaton (Backwater) on the Volga River (12) at the mouth of the Sarepta River, a small tributary of the Volga. A bronze sculpture of Stalin will stand here, near the entrance to lock No 1 of the canal, on a high bank of the river. It will be 22 meters high and installed on a concrete base 40 meters high, making it visible from far away. After passing through lock No 1, the canal will cross the town of Krasnoarmeysk and then pass through locks No 2 and 3.(15) Lock No 3, located on the slopes of the Yeregenenskaya Hills, is one of the main structures of the canal; of large size, it is as high as a three-story building.

Chapurnikovskiy Construction Sector is in charge of the 6-kilometer stretch of the canal where locks No 4, 5, 6, 7, and 8 are located.(11)

Vodorazdel'nyy Construction Sector includes lock No 9. After passing it, the canal reaches a watershed 88 meters above the water level of the Volga. Here the canal runs through the deepest excavation, but gradually the sloped sides become lower and the canal emerges from the hills and comes to lock No 10.(15)

Bereslavskiy Construction Sector covers 30 kilometers of the canal. Over 30 percent of all the earthwork (11.5 million cubic meters) and 12 percent of concreting required for the entire length of the canal had to be carried out in this sector. The Bereslavskiy Construction Sector is responsible for the building of two reservoirs, two dams, a pumping station (16), a spillway, lock No 10 and other structures. Lock No 10 is located in the dam which separates the Varvarovskiy Reservoir from the Bereslavskiy Reservoir.(15) Beginning with lock No 10, the canal starts on its downward course toward the Don River, where the water level is 44 meters below the watershed.(12)

Marinovskiy Construction Sector includes locks No 11 and 12 (17) and the Marinovskiy Pumping Station. The latter will pump water from the Karpovskiy to the Bereslavskiy Reservoir through three pipelines, each with a diameter of 280 centimeters, over a distance of 850 meters at the rate of 54,000 cubic meters per hour.(2)

Donskoy Construction Sector includes the section connecting the canal with the Don River. Lock No 13 and the pumping station which will pump the water of the Don into the Karpovskiy Reservoir are also located in this sector.(18)

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Tsimlyanskaya GES

On 21 September 1951, the Don River was diverted (19) into the bottom openings of the concrete spillway of the Tsimlyanskaya Dam through a specially dug canal about 700 meters long and 250 meters wide. (20) The river was completely dammed on 22 September. Trucks passed over the bridge which had been built across the 100-meter gap in the dam and dumped stones into it. (21)

The work on the GES progressed in September, with 240,000 cubic meters of earth and 6,000 cubic meters of concrete being placed in a 24-hour workday. (7) A November report states that the earth dam is 30 meters high and is growing at a rate of 60-70 centimeters a day along its entire length from the right bank of the river to the concrete spillway. (22) It was also reported that 23 million cubic meters of the total of 26.6 million cubic meters of earth already have been deposited into the dam, and that the builders have pledged to complete the dam by depositing the remaining 3.6 million cubic meters by the end of November. (23) Due to cold weather, however, the rate of dredging has decreased in November to 150,000 cubic meters in a 24-hour workday. (24) The concrete surfacing of the side of the dam facing the reservoir has progressed with the completion of about 60,000 square meters of the surface by the end of October. (8)

A special office, Lespromkhoz, has been organized to clear woods, stumps, and bushes from the bottom of the future Tsimlyanskaya Reservoir, which will be 200 kilometers long and up to 30 kilometers wide. (12) Rocks are blasted at points where they are hazardous to navigation. (25)

On 29 October, parts of the stator for the first turbine were delivered to the GES building. (8) Workers of the Spetsgidroelektromon'azh, which is in charge of assembling and installing all the equipment of the GES, installed the first three stators on their foundations by 17 November. (23)

The work on lock No 14, which is 175 meters long and 18 meters wide, has progressed to such an extent that its builders have requested the Dnepropetrovsk Plant imeni Molotov to deliver a complete set of gates for the lock not later than 20 October (5), since they plan to complete the work on the lock before the end of 1951. (30)

The concreting of lock No 15, which is the last one before Rostov-on-Don, was considerably ahead of schedule in November. (22)

Main Don Irrigation Canal

The main structure of the Main Don Irrigation Canal at the Tsimlyanskaya Reservoir consists of several large-diameter underground pipes through which water will flow from the reservoir into the canal by gravity (26) at a rate of 250 cubic meters per second, or about one million cubic meters per hour. The 190-kilometer-long canal will run from the Tsimlyanskaya Reservoir in a south-western direction through tunnels to the Proletarskaya Stanitsa on the Manych River. At the point just before the canal enters the tunnels, the Nizhne-Donskoy Canal (Lower Don Irrigation Canal), which is kilometers long, will branch off in a western direction to the Semikarakovskaya Stanitsa. (27) The canal will deliver 30 cubic meters of water per second for the irrigation of 65,000 hectares. It is planned that by the spring of 1952, water will arrive at the canal from the Tsimlyanskaya Reservoir. The preference for tunnels under the Sal-Don watershed was based on the fact that a surface canal would have required the excavation of 60 million cubic meters of earth. The diameters of the finished tunnels will be 5.5 meters each. By October 1951, 1.5 kilometers of the first tunnel were completed. (13)

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The 90-kilometer-long Azov Canal between the Veselovskiy Reservoir and the vicinity of Azov (27) will receive water from the Veselovskiy Reservoir. Water will be raised 13 meters from the reservoir into the canal by pumps with a total capacity of 20 cubic meters per second. The Azov Canal is planned to be in operation by the spring of 1952.(13) The construction of an interkolkhoz GES at the Veselovskiy Dam has been completed. The availability of power to kolkhozes as soon as the reservoir is filled with water is assured. Four turbines and 44 kilometers of high-tension transmission lines have been installed.(28)

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